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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,802	11/15/2006	Rolf Cremerius	66969-0003	6136

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EXAMINER	
JENNISON, BRIAN W	
ART UNIT	**PAPER NUMBER**
3742	

MAIL DATE	DELIVERY MODE
12/21/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/562,802	CREMERIUS ET AL.	
	Examiner	Art Unit	
	BRIAN JENNISON	3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 October 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,14,16,18 and 20-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,14,16,18 and 20-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 2 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The added material which is not supported by the original disclosure is as follows: “without a filler”. The phrase “without a filler” is considered a negative limitation in the claim. It is not clear from the originally filed specification that the process does in fact take place without the use of filler. Paragraph [0014], which is clearly involved in the description of the present invention, states “if a filler is used to produce the weld seam.” This is not evidence of not using a filler. Paragraph [0031] states " On account of the avoidance of secondary heating, filler…” This does not appear to be sufficient support to constitute the negative claim limitation of “without a filler.” These statements in the specification are not mentioned with the steps recited in Paragraphs [0009]-[0013] and [0019]-[0023]. Therefore, they are not deemed to be part of the claimed process.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 2, 14, 16, and 18-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clarke et al (US 5,211,327) in view of Brenner et al (US 6,365,866) and Araki et al (US 4,020,312) with evidence from Coleman et al (US 2003/0017356).

Clarke discloses regarding claim 2 a process for joining components for torque transmission in a vehicle, the components being made from hardenable steel and having a material thickness, (A method for welding hardenable steel which can be components in a torque transmission. See Col. 2, Line 35 and Fig. 2 for material thickness at 26) by producing a weld seam without secondary heating, (no preheating or secondary heating is needed. See Column 4, Lines 46-51) comprising: positioning a welding electrode with respect to a weld line; applying a voltage; supplying a plasma gas; forming an arc; and (A plasma arc, using a plasma gas, is formed after an electrode is positioned and a voltage is applied. See Column 1, Lines 20-23) melting the steel in the vicinity of the weld line over the entire material thickness. (Melting occurs in the vicinity of the weld line. See Column 1, Lines 24-28.) An energy per unit length of a 4.5kW power beam is 196 J/mm at 1.4m/min as stated by applicant in the reply filed 6/3/2009, meaning 1kW/mm = 43.55 J/mm. Fig 4 shows the steel being melted to slot 126 which covers the entire thickness of the material. The process is performed without

the use of filler metals. (Column 1, Lines 50-65) Clarke fails to teach regarding claim 2, energy per unit length is 234 J/mm to 3360 J/mm and the steel thickness being 2.0 mm to 10.0 mm. Brenner teaches regarding claim 2, the parts have a 3.0 mm thickness(See Column 4, Lines 1-5). Araki et al teaches regarding claim 2, a welding current of 1500A and an arc voltage 36V for a power of 54kW at 300mm – 1500mm per minute for an energy per unit length of 2351.7 J/mm at 1.4m/min. (P=IV and 54kW*43.55J/mm) See Column 22, lines 40-45. It would have been obvious to adapt Clarke in view of Brenner and Araki to provide the welding energy and the material thickness since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. (In re Aller, 105 USPQ 233.) Araki discloses regarding claim 2, a steel plate is formed into a pipe and welded at the seam. Fig 6 shows a picture, which must be to scale of the weld being made through the thickness of the pipe. Coleman shows that this process may be carried out without the use of filler metals or an electrode and may be through the entire thickness as shown in Fig 4B. It would have been obvious to one having ordinary skill in the art to make the weld and melt the steel through the thickness to provide a complete weld. Clarke discloses regarding claim 14, Fig 4 shows the weld joint to be a single layer design. Clarke discloses regarding claim 16, a butt seam may be welded in the metal. See Column 1, Lines 55-57. Clarke disclose regarding claim 18, Welding was performed at a rate of 1.4m/minute, which is at least 0.2 m/min. Clarke disclose regarding claim 20, The weld seam 114 shown in Fig 3. is a radial circumferential seam, around the gear 112. Clarke disclose regarding claim 21 as best understood, Clarke

disclose regarding claims 22-23, The weld seam is made between a gear 112 and a shaft 116 (See Column 8, Lines 60-65) which are included in the parts of a torque transmission welded by the method involving no secondary heating, (See Column 4, Lines 46-51) when a plasma arc is formed after an electrode is positioned and a voltage is applied. (See Column 1, Lines 20-23) Melting occurs in the vicinity of the weld line. (See Column 1, Lines 24-28.) Clarke discloses regarding claim 24, Cracks in the weld seam are inhibited from forming in the hardenable steel pieces. See Column 3, Lines 27-31. Clarke discloses regarding claim 25, Cracks in the weld seam are inhibited from forming in the hardenable steel pieces. See Column 3, Lines 27-31. Clarke fails to disclose regarding claim 26, a join comprising ductility in the range from 250HV to 650HV. Brenner discloses regarding claim 26, the welding seam has an average hardness of 280HV. See Column 4, Lines 55-68. It would have been obvious to adapt modified Clarke in view of Brenner to provide the ductility of 280HV for inhibiting cracks in the weld.

4. Claims 27-30 as best understood are rejected under 35 U.S.C. 103(a) as being unpatentable over Clarke et al (US 5,211,327) as modified by Brenner et al (US 6,365,866) and Araki et al (US 4,020,312) and in further view of Kehrer (US 2004/0136776).

The teachings of Clarke as modified by Brenner and Araki have been discussed above.

Clarke as modified by Brenner and Araki fails to disclose regarding claims 27 and 28 a vehicle comprising an engine with a drive system, wherein the drive system includes components for torque transmission, and at least two components have been welded to one another by a process according to Claim 2, 18. Clarke as modified by Brenner and Araki fails to disclose regarding claims regarding claims 29, 30**,** a vehicle comprising at least two components made form hardenable steel and connected by a join comprising a weld seam produced by a process according to Claim 2, 18. Kehrer discloses regarding claims 27-30**,** Paragraph [0002] states the parts being welded may be part of a vehicle such as a transmission with two parts being welded together. Paragraph [0011] discloses these parts made from hardenable steel may be joined by plasma welding. It would have been obvious to adapt modified Clarke in view of Kehrer to provide the two components joined by a plasma welding process since Kehrer discloses that two hardenable steel parts of a vehicle or transmission may be welded using a plasma welding process for improved thermal and metallurgical properties of the weld seam.

Response to Amendment

4. The amendment filed 10/11/2010 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: “without a filler”.

Applicant is required to cancel the new matter in the reply to this Office Action.

The phrase “without a filler” is considered a negative limitation in the claim. It is not clear from the originally filed specification that the process does in fact take place without the use of filler. Paragraph [0014], which is clearly involved in the description of the present invention, states “if a filler is used to produce the weld seam.” This is not evidence of not using a filler. Paragraph [0031] states " On account of the avoidance of secondary heating, filler…” This does not appear to be sufficient support to constitute the negative claim limitation of “without a filler.” These statements in the specification are not mentioned with the steps recited in Paragraphs [0009]-[0013] and [0019]-[0023]. Therefore, they are not deemed to be part of the claimed process.

Response to Arguments

5. Applicant's arguments filed 10/11/2010 have been fully considered but they are not persuasive.

6. In response to applicant's arguments on pages 6-7 against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In response to applicant’s argument of the reply regarding the process without the use of an electrode or filler. Araki is not relied upon for the teachings of the without a filler or electrode. Araki does not teach away simply because

the process involves the use of an electrode. Clark and Brenner do not specifically teach the specific energy levels. One having ordinary skill in the art would choose an energy level appropriate to the type of material for the proper amount of heat to melt the material chosen. In response to applicant's arguments on page 7 of the reply regarding secondary heating, Clarke specifically states the process may be without pre-heating. Brenner and Araki are not relied upon for this limitation. (See Column 4, Lines 46-51 of Clarke)

In response to applicant's argument on pages 8-9 of the reply regarding melting over the entire material thickness, Araki does in fact teach this limitation as cited above and again here: a steel plate is formed into a pipe and welded at the seam. Fig 6 shows a picture, which must be to scale of the weld being made through the thickness of the pipe. Coleman shows that this process may be carried out without the use of filler metals or an electrode and may be through the entire thickness as shown in Fig 4B. Furthermore, a case of obviousness is made for melting through the entire material thickness therefore the drawings need not be to scale to make the case of obviousness. However, Araki clearly shows the entire thickness being melted together from a photograph, which must be to scale since it is not an illustration, in Fig 6.

In response to applicant's arguments on page 10 regarding claims 27-30, these references are not relied up for rejecting the claim limitations as argued in the reply.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRIAN JENNISON whose telephone number is (571)270-5930. The examiner can normally be reached on M-Th 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TU HOANG can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BRIAN JENNISON/
Examiner, Art Unit 3742

12/15/2010

/Mark H Paschall/
Primary Examiner, Art Unit 3742